

**ABSTRACT OF THE DISCLOSURE**

In a MPLS packet network comprising a source edge router, a destination edge router and a label switch router connected by transmission links and using a packet

5 transport protocol providing a protocol type indicator of the transported packet, a method of transmitting packets from the source edge router through the label switch router to the destination edge router, comprising the steps of:

10 assigning different protocol type indicators at the source edge router to user MPLS packets and to non-user MPLS packets of at least one additional protocol type;

15 at the label switch router, forwarding MPLS packets received from the source edge router or another label switch router in such a manner as to preserve the protocol type indicator of the packet transport protocol of each received MPLS packet;

20 at the destination edge router, recognizing the protocol type indicator of the transport protocol of the MPLS packets received from the label switch router, and segregating the user MPLS packets from non-user MPLS packets. Preferably, user and non-user MPLS packets are assigned the same MPLS label and sent via the same label switched path. Corresponding enhanced MPLS network is also provided.